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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/655,143

09/04/2003

Beverly A. Rzigalinski

UCF-375

6531

23717 7590 03/20/2007

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EXAMINER

CARTER, KENDRA D

ART UNIT

PAPER NUMBER

1617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/20/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/655,143

**Applicant(s)**

RZIGALINSKI ET AL.

**Examiner**

Kendra D. Carter

**Art Unit**

1617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 3-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 9/4/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

Applicant's election with traverse of Group II, claim 2, in the reply filed on February 12, 2007 is acknowledged. The traversal is on the ground(s) that several of the inventions are classified in the same class. This is not found persuasive because although some of the different groups are classified in the same class, they are not classified in the same subclass, thus requiring different searches. In regards to group I and VIII, which are classified in the same class and subclass, the inventions are distinct because they are drawn to a product and a product of use. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group VIII, restriction for examination purposes as indicated is proper. It is noted that while the searches of Group I and VIII may be overlapping, there is no reason to believe that the searches would be coextensive. In searching Group I, Examiner will be focusing on the patentability of the cerium oxide nanoparticles itself, and not the composition of Group VIII. Conversely, in searching Group VIII, Examiner will be focusing on the patentability of the composition comprising cerium oxide nanoparticles and not the cerium oxide nanoparticles itself.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1-22 are pending and claims 1 and 3-22 are withdrawn from consideration.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kropf et al. (US 6,368,577 B1) in view of Shui et al. (Experimental Eye Research, December 2000, vol 71(6), pp. 609-618).

Kropf et al. teaches a composition used for blocking the penetration of UV radiation comprising (see abstract, lines 1-2) inorganic light-blocking pigments that are finely dispersed metal oxides (i.e ultra fine) such as cerium oxide with a mean diameter of less than 100 nm, preferably between 5 and 50 nm (see column 8, lines 29-32 and 34-36). To prevent the nanoparticles from agglomerating, it is advisable to dissolve the starting materials in the presence of suitable protective colloids or emulsifiers and/or to expand the critical solutions into aqueous emulsifiers or into cosmetic oils which may in turn contain redissolved emulsifiers and/or protective colloids (see column 2, lines 60-66). The compositions are suitable for topical application (see column 3, line 48).

Kropf et al. does not teach a method of enhancing the longevity of cultured living cells.

Shui et al. teaches the morphological observation on cell death and phagocytosis induced by ultraviolet irradiation in cultured human lens epithelial cells (see title). The cell viability was stained (see abstract lines 10 and 11) and found that UV irradiation causes both apoptosis and necrosis of the cell line (see abstract lines 11, 17 and 18).

To one of ordinary skill in the art at the time of the invention would have found it obvious to combine the composition of Kropf et al. and a method to enhance the longevity of cultured living cells because Shui et al. teaches that UV irradiation causes both apoptosis and necrosis of the cell line (see abstract lines 27 and 28). Thus, it would be obvious to add a known UV protectant (i.e. ultra fine engineered nanoparticles of cerium oxide) to help prevent UV from affecting the cell.

Therefore, one would be motivated to combine the non-agglomerated ultrafine engineered nanoparticles of cerium oxide to protect the cultured cells from apoptosis or/and necrosis, hence enhancing the longevity.

### ***Conclusion***

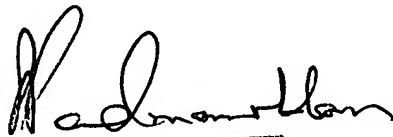
No claims are allowed. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kendra D. Carter whose telephone number is (571) 272-9034. The examiner can normally be reached on 8:30 am - 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan can be reached on (571) 272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KDC

  
SREENI PADMANABHAN  
SUPERVISORY PATENT EXAMINER